

### **REMARKS/ARGUMENTS**

Claims 1-5, 9-13, 17-25 remain unchanged. Claims 6-8 and 14-16 were previously withdrawn, as being drawn to a non-elected invention.

Independent claims 1, 9, 17, 18 and 19 stand rejected under 35 USC 103(a) as being unpatentable over Junqua (6,598,018 B1) in view of Thelen et al. (US 6,526,380) and further in view of Ju et al.(US 6,934,683). Applicant traverses this rejection for the following reasons.

A. The Ju patent was filed on January 31, 2001 and the earliest publication date was September 12, 2002. The present application has a priority date of March 12, 2001. The inventors of the present invention could not have combined the Ju patent with any other patent because the content of the Ju patent was not published prior to the filing of their application. Therefore the Ju patent is an inappropriate prior art document and the suggested combination of Junqua (6,598,018 B1) in view of Thelen et al. (US 6,526,380) and further in view of Ju et al.(US 6,934,683) could not have been possible prior to the invention of this application.

B. The Examiner admitted that “ neither Junqua nor Thelen teach that the received continuous speech natural language utterance comprises at least one of sound segments corresponding to words or phrases having the same meaning as other words or phrases corresponding to different sound segments, respectively, sound segments corresponding to words or phrases having different spellings and different meanings, sound segments corresponding to words or phrases having the same spellings and different meanings, or sound segments corresponding to words or phrases having a meaning that is subject area dependent”. He then argued that Ju et al teach natural language input including sound segments corresponding to similar sounding words or phrases having different spellings and different meaning (homophones) and those having the same spelling and different meanings (similar sounding elements of a language). However, this is an incorrect statement. Referring to the cited paragraph column 2, lines 55-59, Ju et al teach “ the

speech recognition system module 10 can access a language model 16 in order to determine which words, and in particular, which homonyms or other similar sounding elements have been spoken”. Furthermore, Ju et al. teach that “A homonym is an element of a language such as character or syllable, that is one of two or more elements that are pronounced alike but have different spellings.” (Not meanings!) (see column 1, lines 36-39). There is no reference to the word “meaning” in this quote by Ju et al. According to Merriam-Webster dictionary, “meaning” refers to the “logical connotation of a word or a phrase”. The lowest speech unit to which the notion “meaning” can be applied is a word. (Not syllables!). Accordingly, Ju et al has nothing to do with the problem of overcoming homonymy/polysemy, which is one of the problems the present invention solves. Furthermore, there is no reference in Ju et al., to “similar sounding elements having different spellings and different meanings or the same spellings and different meanings”. The word “meaning” was inserted in the cited quote from the prior art reference by the Examiner in order to reconstruct the elements of the present invention. This is an improper word insertion in the referenced prior art text. Therefore, claims 1, 9, 17, 18 and 19 are patentably distinguishable from Ju et al., and from the combination of Junqua with Thelen et al and with Ju et al.

C. The Junqua patent refers to processing a spoken request to control an automobile device. The Thelen patent addresses the problem of a huge vocabulary system. The Ju patent refers to creating a language model by associating a character string to each word, i.e., “N as in Nancy” (column 8, lines 3-29). There is no motivation or reason to combine these diverse patents in order to address the problem of understanding free continuous speech natural language that comprises at least one of sound segments corresponding to words or phrases having the same meaning as other words or phrases corresponding to different sound segments, respectively, sound segments corresponding to words or phrases having different spellings and different meanings, sound segments corresponding to words or phrases having the same spellings and different meanings, or sound segments corresponding to words or phrases having a meaning that is subject area dependent and then generating computer instructions.

Based on these reasons A, B, C it is believed that claims 1, 9, 17, 18 and 19 are patentably distinguishable from the suggested combination of Junqua with Thelen et al and with Ju et al. Accordingly, it is believed that the 35 USC 103 rejection of claims 1, 9, 17, 18 and 19 is overcome and claims 1, 9, 17, 18 and 19 should be allowable. Claims 2-5 and 20-22 depend upon claim 1 and claims 10-13 and 23-25 depend upon claim 9. Since claims 1 and 9 are patentably distinguishable from the suggested combination of Junqua with Thelen et al and with Ju et al., they should also be patentably distinguishable from the suggested combination of Junqua with Thelen et al and with Ju et al., and should be also allowable.

Claims 20 and 23 were also rejected under 35 USC 103(a) as being unpatentable over Junqua (6,598,018 B1) in view of Thelen et al. (US 6,526,380) and further in view of Ju et al.(US 6,934,683) and further in view of Ramaswamy et al. (US 6,622,119). Applicant traverses this rejection for the above mentioned reasons and for the following additional reasons.

D. As the Examiner admitted, Junqua, Thelen et al., and Ju et al., neither alone or in combination teach:

“capturing a set of successfully understood free continuous speech natural language dialogs and associated program modules used to produce computer understanding;

analyzing the captured program module information to determine a frequency of occurrence value for proceeding to a next program module from a current program module;

storing the frequency of occurrence values in a matrix; and

determining, using the matrix, the appropriate program module selection based on choosing program modules having non-zero frequency value entries in the matrix.”

The Examiner then states that Ramaswamy et al. *implies* that all these steps were done because according to Ramaswamy et al. “ A dialog manager may be coupled to the command predictor for prompting a user for a response based on a most probable next command from the list of predicted commands” (col. 1, lines 53-54).

However, the examples of commands that Ramaswamy et al., mentions in his patent are not “free continuous speech natural language dialogs” organized in subject areas, sub-areas, sub-sub-areas, etc. Instead they are monolectic commands such as in the example of an e-mail application , “ sent”, “save” , “yes”, “no”, “checkNewMail”. Referring to column 4, lines 26-35 of Ramaswamy et al., “In the example of an electronic mail application described above, if the user input is "do I have any new messages?" the corresponding formal command may be: checkNewMail( ). The formal command from NLU engine 110 is submitted to a dialog manager 112, to be processed for execution, and also to command predictor 102, for predicting the users next command.”

These monolectic “commands” are not structurized set of entities organized in subject areas, sub-areas, sub-sub-areas, etc., but rather amorphous sets of commands. Furthermore, Ramaswamy’s probabilities relate to these amorphous sets of *all possible* pairs of commands in a *non-structurized* set, while in the present invention, only pairs of *ordered (subsequent)* items, as defined in claim 1 are considered in the statistics and only for the operations belonging not to the entire set of possible items but to the items of one, current branch of a *tree-like structure*, as defined by the structure in claim 1 of subject areas, sub-areas, sub-sub-areas, etc. Therefore the present invention provides a quick and efficient handling of understanding of “free continuous speech natural language dialogs”, whereas Ramaswamy et al., model is not designed to do so.

E. Furthermore, The Ramaswamy et al., patent was filed on October 30, 1999 and the earliest publication date was September 16, 2003. The present application has a priority date of March 12, 2001. The inventors of the present invention could not have combined the Ramaswamy et al., patent with any other patent because the content of the Ramaswamy et al., patent was not published prior to the filing of their application. Therefore the Ramaswamy et al., patent is an inappropriate prior art document and the suggested combination of Junqua (6,598,018 B1) in view of Thelen et al. (US 6,526,380) and further in view of Ju et al.(US 6,934,683) and further in view of Ramaswamy et al., could not have been possible prior to the invention of this application.

It is believed that all of the pending claims have been addressed in this paper. Failure to address a specific rejection, issue or comment, does not signify agreement with or concession of that rejection, issue or comment. Nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

In view of the above, it is submitted that claims 1-5, 9-13, 17, 18, 19, 20-25 are in condition for allowance. Reconsideration of the final rejection is requested and allowance of these claims at an early date is solicited.

If this response is found to be incomplete, or if a telephone conference would otherwise be helpful, please call the undersigned at 781-235-4407

Respectfully submitted,

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## meaning

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**Main Entry: mean·ing** 

**Pronunciation:** \ˈmē-nīŋ\

**Function:** *noun*

**Date:** 14th century

**1 a :** the thing one intends to convey especially by language : PURPORT **b :** the thing that is conveyed especially by language : IMPORT

**2 :** something meant or intended : AIM <a mischievous *meaning* was apparent>

**3 :** significant quality; *especially* : implication of a hidden or special significance <a glance full of *meaning*>

**4 a :** the logical connotation of a word or phrase **b :** the logical denotation or extension of a word or phrase

— **meaning** *adjective*

— **mean·ing·ly**  \-nīŋ-lē\ *adverb*

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